



Increasing Mortgage Affordability and Availability with Reinsurance

Long-Term Strategic Commitment
and Sound Public Policy



KEY CONCLUSIONS

- Insurance protection provided by mortgage insurers and diversified reinsurers greatly advances the dual public policy goals of shrinking taxpayer mortgage credit risk exposure while also enhancing the affordability of mortgages.
- Traditional reinsurers have a long track record of remaining committed to established business lines throughout multiyear loss and underwriting cycles.
- Programmatically purchasing reinsurance protection improves the affordability of mortgage credit by both removing cost inefficiencies and reducing the cost of capital.
- Credit Risk Transfer (CRT) provides a significant pool of private capital supporting mortgage credit risk as well as an independent view of the risk and valuable feedback to investors, regulators and policymakers.
- The GSEs' commitment to ongoing risk management through programmatic use of CRT increases the safety and soundness of the mortgage finance system and bolsters the GSEs' ability to provide mortgage liquidity throughout economic cycles.
- Regulatory certainty is needed to develop robust CRT programs for U.S. banks in order to increase the availability and affordability of mortgages.

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Introduction

This white paper aims to provide a comprehensive overview of the mortgage credit risk transfer (CRT) market, addressing two critical aspects of its importance in the current economic and political landscape. First, with the upcoming election cycle and inevitable changes in congressional and administrative appointments, it is crucial to ensure that policymakers and stakeholders understand the vital role CRT plays in mitigating taxpayer exposure to catastrophic losses like those experienced during the 2008 Great Financial Crisis (GFC). Second, this paper highlights how CRT enhances mortgage affordability, a key concern for many Americans.

The CRT market's significance is underscored by its diverse participation. It includes sophisticated capital-markets investors (so-called "funded" CRT) and approximately 25 large reinsurers and reinsurance groups ("unfunded" CRT), most of which cover diversified insurance risk globally. Diversified global risk distribution enhances insurance affordability and availability across various markets and geographies.

Furthermore, this white paper explains how the credit protection provided by reinsurers and funded credit investors through CRT complements the front-end insurance protection from mortgage insurance on low-down-payment mortgages. The combined effect of these diverse sources of private capital results in substantial coverage for Government Sponsored Enterprises Fannie Mae and Freddie Mac (GSEs). Together, CRT and mortgage insurance provide credit protection for more than \$1 trillion of the \$6.7 trillion mortgages in the GSEs' portfolios.¹

The benefits of funded and unfunded CRT are not limited to Fannie Mae and Freddie Mac. European banks mitigate their credit risk by issuing "Significant Risk Transfer," which is CRT by another name. The International Association of Credit Portfolio Managers' annual survey on synthetic Significant Risk Transfer transactions shows that in 2023 banks protected €18.5 billion in first-loss and mezzanine tranches through synthetic on-balance-sheet securitizations. This is an increase from €16.3 billion in 2022, leading to a total amount of protected tranches of €55 billion by the end of 2023.

Closer to home, since being authorized by Congress in 2012, the Federal Emergency Management Agency (FEMA) has programmatically procured CRT protection to help strengthen the financial framework of the National Flood Insurance Program (NFIP), having suffered catastrophic program debt as a result of Hurricane Sandy in 2012 and Hurricane Katrina in 2005. FEMA has recovered \$1.042 billion in reinsurance coverage under its 2017 Reinsurance Program as a result of Hurricane Harvey and has submitted its first claim under

¹ See 4Q23 FHFA CRT Progress Report: <https://www.fhfa.gov/sites/default/files/2024-04/CRT-Progress-Report-4Q23.pdf>.

its 2022 Reinsurance Program as it continues to prioritize Hurricane Ian's recovery efforts. Most recently, FEMA has transferred \$1.92 billion of the NFIP's flood risk to the private sector ahead of the 2024 hurricane season.²

There are ongoing efforts to encourage U.S. bank regulators to clarify the bank capital rules relating to the risk-mitigating benefits of CRT for domestic banks. Federal banking regulators should permit U.S. banks to participate in CRT transactions that are safe, sound, transparent and fair, like those permitted by other federal agencies and jurisdictions. By elucidating these points, this paper aims to inform policy decisions and promote a stable, efficient mortgage market that benefits both taxpayers and homeowners.

"CRT ALLOWS PRIVATE CAPITAL (RATHER THAN THE U.S. GOVERNMENT) TO ABSORB LOSSES WHEN THE UNEXPECTED HAPPENS."

The Imperative of Insurance

The purpose of all insurance products is to provide protection against the risk of loss. From an unexpected automobile crash to a home fire, insurance safeguards against unexpected loss. CRT is a form of insurance protection that protects Fannie Mae and Freddie Mac from unexpected losses that occur when borrowers default on their mortgages and the proceeds from the foreclosure sales are insufficient to cover the debt. As experienced during the GFC, mortgage losses can be catastrophic since large numbers of mortgage borrowers tend to default at the same time due to systemic factors such as a spike in unemployment or decreasing home values across a particular region or nationwide. CRT allows private capital (rather than the U.S. government) to absorb losses when the unexpected happens.

Mortgage insurance allows borrowers to buy a home with as little as a 3% down payment, which makes homeownership and the ability to accumulate wealth much more attainable. However, borrowers who make very low down payments also pose a greater risk of loss to the GSEs as this cohort of borrowers generally does not have the savings necessary to withstand a life event hardship, such as death, divorce or a temporary loss of employment. Mortgage insurance provides first-loss loan-level protection on low-down-payment loans to cover this expected higher risk of loss during periods of economic stress. CRT reinsurers and investors, on the other hand, typically do not provide first-loss or loan-level protection, but rather provide portfolio protection against losses due to macroeconomic stress, such as a nationwide decrease in home prices or recessionary conditions. Together, mortgage

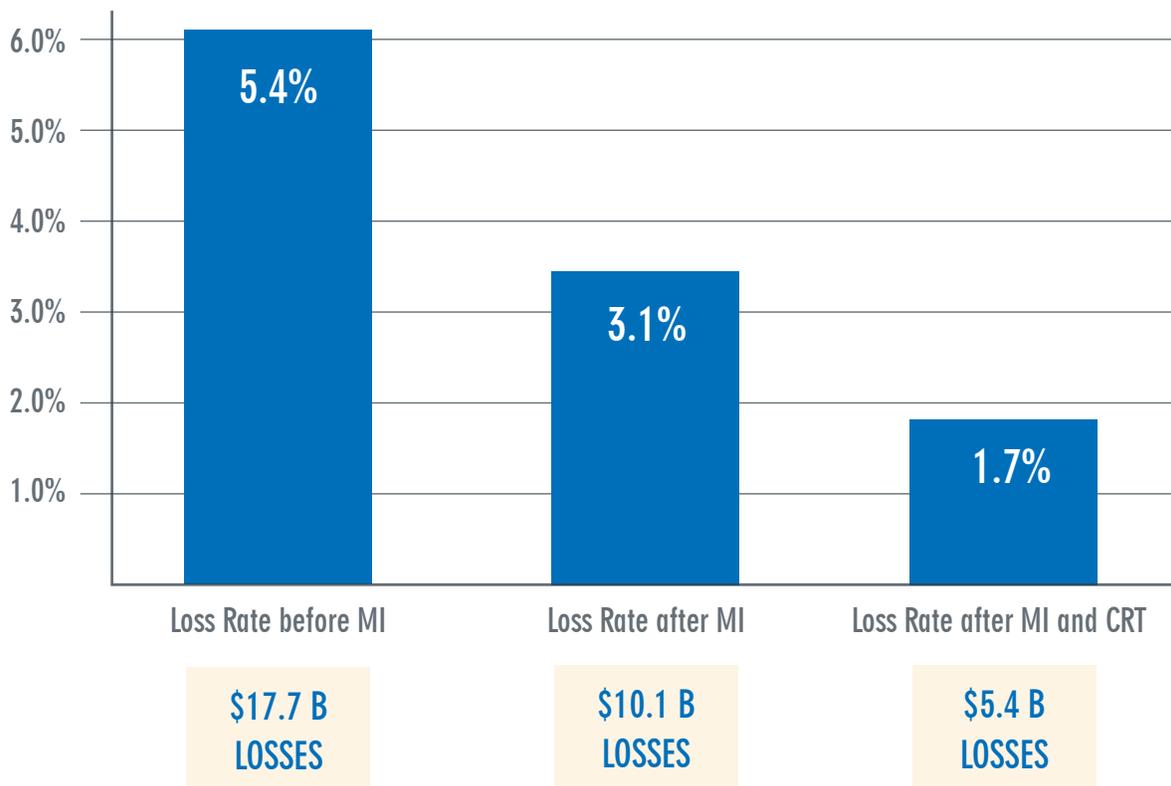
² July 3 FEMA announcement: <https://www.fema.gov/press-release/20240710/fema-will-recover-363-million-private-reinsurance-markets#:~:text=1%2C%202022%20reinsurance%20agreement,to%20policyholders%2C%20with%20processing%20ongoing.>



insurance and CRT provide the GSEs robust insurance protection against losses incurred in the normal course as well as unexpected losses due to macroeconomic stress.

To illustrate the importance of the GSEs' CRT programs, it is useful to analyze how the GSEs losses would have been different during the GFC had their CRT programs been in place. Using the 2006 origination-year experience as a proxy for the GFC, 12.6% of low-down-payment loans in that cohort went to foreclosure with a loss rate of 7.5% before the benefit of mortgage insurance and CRT. Based on today's credit mix, which excludes many of the highest-risk loans of the past, Arch estimates that 9.2% of loans today would go to foreclosure if the GFC were to happen again with a loss rate of 5.4%.³ Extrapolating further, between Q3 2022 and Q2 2023, the GSEs purchased \$325B of low-down-payment loans, which would translate into approximately \$17.7B of losses at a 5.4% loss rate. Thankfully, the GSEs are in a much different position today than during the GFC. With the benefit of mortgage insurance (MI), the loss rate would decrease from 5.4% to 3.1%. Including the benefit of CRT, the loss rate would decrease even further to 1.7%.⁴

EXHIBIT 1: IMPACT OF MORTGAGE INSURANCE AND CRT ON LOSSES COMPARABLE TO 2006



³ 2006 experience excludes FICO® < 620, missing FICO, DTI > 50% and missing DTI. Comp'd to 2023 based on FICO and LTV bands. Assumes same level of MI payouts as on 2006 loans. Assumes same structure as CIRT 2023-9, which covered low-down-payment loans acquired by Fannie Mae.

⁴ CRT protection based on CIRT 2023-9, which attaches at 1.65% of losses and detaches at 4% of losses.



The benefit of CRT and mortgage insurance together would cover approximately 70% of the stress losses the GSEs would experience if there was a repeat of the GFC. It also demonstrates how CRT insulates the GSEs from being overly concentrated in mortgage credit risk exposure and fortifies their financial resilience to withstand the next economic downturn.

Global Reinsurers' Long-Term Commitment to U.S. Mortgage Markets

One of the most significant reforms implemented to enhance the resiliency of the housing finance system after the 2008 GFC was the creation and programmatic issuance of CRT. The GFC crystallized the danger of holding concentrated mortgage credit risk within a single entity, as evidenced by the failure of Fannie Mae, Freddie Mac and half of the mortgage insurance industry.

In 2008, Fannie Mae and Freddie Mac entered conservatorship under Federal Housing Finance Authority (FHFA) oversight. Five years later, Freddie Mac issued its inaugural CRT transaction in 2013 and since then, both GSEs have programmatically distributed mortgage credit risk to reinsurers and funded credit investors. Capital in the reinsurance sector has steadily increased since the GFC and has met the increasing demand for mortgage credit risk protection. Aon plc estimates that total global reinsurer capital across all risks has grown steadily from \$385 billion in 2006 before the GFC⁵ to \$695 billion as of 1Q 2024. Approximately \$93 billion of this growth is tied to inflows of capital from diversified “third-party” sources — pension funds, endowments, sovereign wealth and hedge funds. These alternative sources demonstrate the increasing diversification of protection providers and now contribute \$110 billion, or about 16%, of the industry’s current capital base.⁶ That represents a four-fold increase over the share third-party sources contributed in 2006. The GSEs’ programmatic purchasing of insurance protection has significantly enhanced their resiliency to withstand future losses and will enable them to provide liquidity to the housing markets during the next economic downturn.

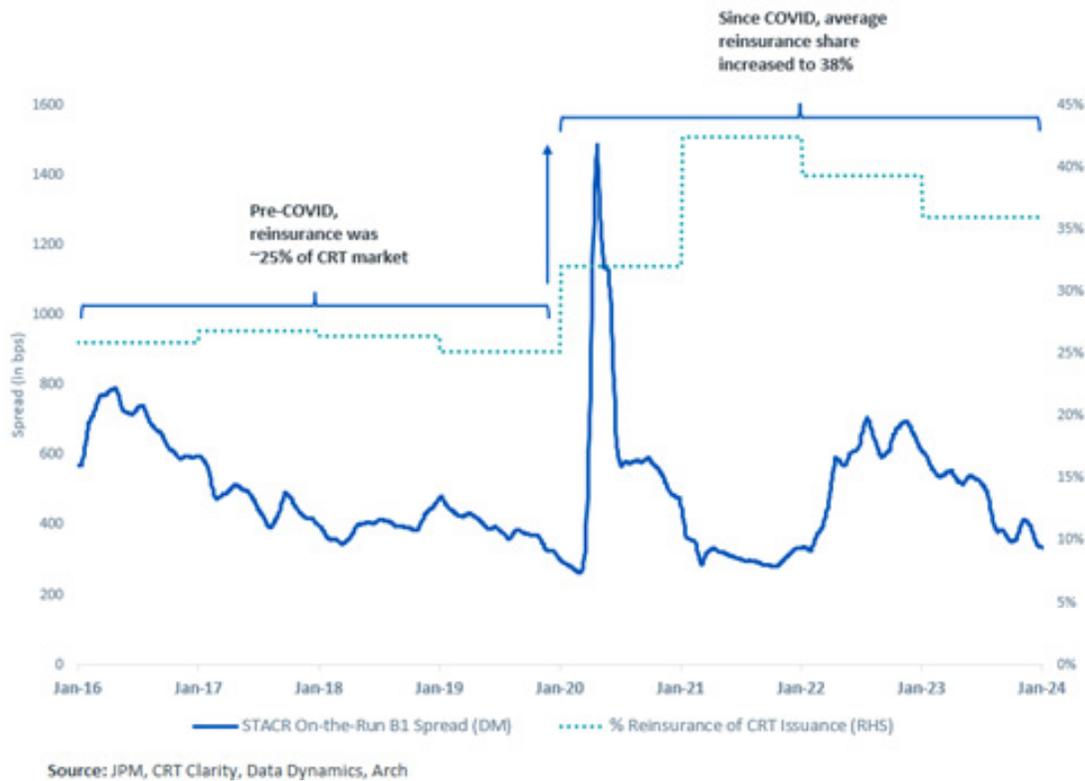
The reinsurance industry business model is fundamentally built on pricing for inevitable catastrophic loss and on proper diversification to ensure a resilient portfolio, comparable to diversifying through index investing instead of picking individual stocks. Reinsuring mortgage credit risk offers both attractive returns and obvious diversification benefits, given that it has little correlation with the reinsurance industry’s traditional property, casualty, life or health risk

⁵ December 2014 Federal Office of Insurance Report, pg. 9: <https://home.treasury.gov/system/files/311/FIO%20-Reinsurance%20Report.pdf>.

⁶ <https://assets.aon.com/-/media/files/aon/reports/2024/reinsurance-market-dynamics-2024-report.pdf>.

exposures. History has shown no great exodus of reinsurers from markets following market disruptions, such as COVID-19. In fact, reinsurers provided the GSEs with more CRT protection during the COVID-19 pandemic, when funded credit investors became more skittish.

EXHIBIT 2: (RE)INSURANCE CAN BE RELIED UPON DURING PERIODS OF ILLIQUIDITY



Reinsurers have a long track record of remaining committed to established business lines and provide crucial risk absorption during economic crisis when capital markets may seize up.

"PROGRAMMATICALLY PURCHASING CRT PROTECTION ACTUALLY IMPROVES THE AFFORDABILITY OF MORTGAGES."

CRT Enhances the Affordability of Mortgages

While seemingly counterintuitive, programmatically purchasing CRT protection actually improves the affordability of mortgages. CRT reduces the GSEs' cost of equity, which is a primary driver in the cost of the loan-level price adjustments ("LLPA") charged to borrowers, in two critical ways:

1. Purchasing CRT is cheaper than holding equity capital against the risk due to the capital credit recognized under the Enterprise Regulatory Capital Framework ("ERCF"); and



2. For the risk retained by the GSEs that is supported by equity capital, programmatic CRT issuance lowers the cost of raising equity capital by reducing the volatility of the GSEs' results during an economic downturn.

Simply put, the GSEs are provided an incentive under the ERCF to cede credit risk to counterparties with diversified risk portfolios. Purchasing CRT protection and recognizing the ERCF benefit of doing so is cheaper than the cost to the GSEs of holding equity capital against that same risk. The ERCF requires the GSEs to apply a risk-insensitive 20% loan-level risk-weight floor across their portfolios, which requires the GSEs to hold more equity capital than the risk implies. To paraphrase an Urban Institute study that quantifies the impact, applying the 20% loan-level risk-weight floor on the lowest-risk loans translates into 160 basis points of capital charges on nearly half of the loans the GSEs acquire, which is 5 to 10 times the level of risk implied by these loans.⁷ CRT providers, on the other hand, are able to hold capital commensurate with the level of risk implied by the loans. Thus, CRT is cheaper than equity and reduces the capital burden on the GSEs, which should result in lower LLPAs charged to borrowers.

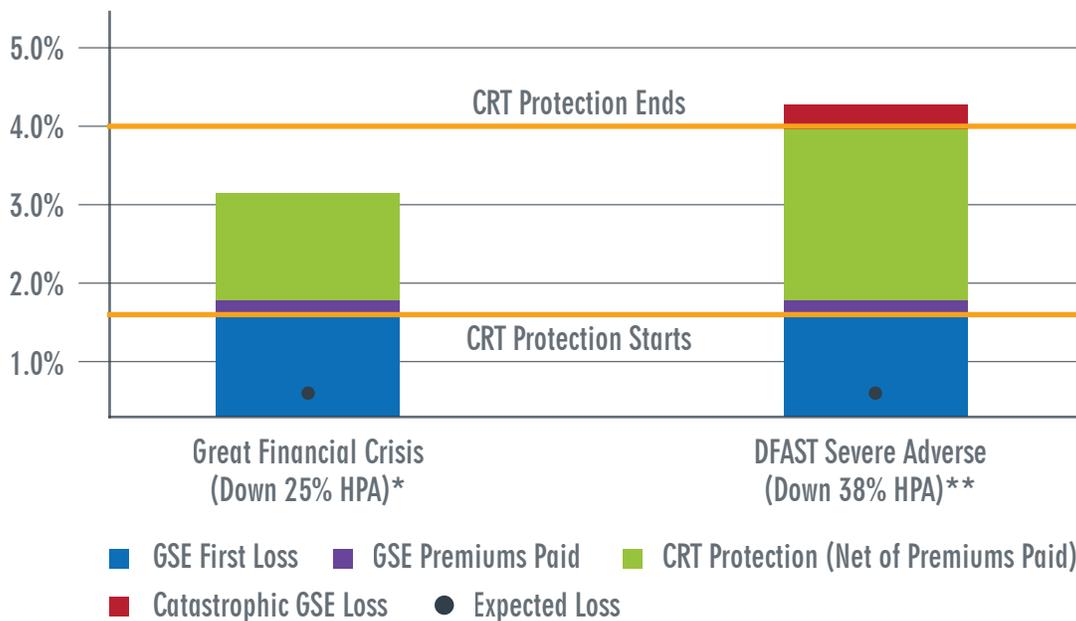
Second, CRT reduces the cost of equity capital required to support the risk retained by the GSEs by reducing the volatility of losses experienced during an economic cycle. Since investors demand an increased return on volatile or riskier assets, reducing the volatility likewise lowers the return expectation of investors, which makes the GSEs' cost of raising equity cheaper. Illustrating how CRT reduces the volatility of losses, the GSEs are required to conduct an annual Dodd-Frank Act Stress Test ("DFAST"), based on the hypothetical supervisory severely adverse economic scenario published by FHFA. The 2023 DFAST scenario included assumptions such as a spike in unemployment to 10%, a sharp decline in

⁷ "How to Think about Fannie Mae and Freddie Mac's Pricing," Urban Institute, August 2023: <https://www.urban.org/research/publication/how-think-about-fannie-mae-and-freddie-macs-pricing>.

home prices by 38% and a severe recession impacting both U.S. and global markets. The severely adverse economic conditions in the 2023 DFAST scenario are more severe than the conditions experienced during the GFC, where house prices dropped by 25%. Regulators require the GSEs to model a range of results, including scenarios even more severe than the GFC, since it is impossible to predict the severity and duration of the next crisis.

Using the same 2006 originations as a proxy and overlaying a current CRT structure on low-down-payment loans,⁸ the credit protection provided by CRT would absorb 42% of modeled GFC losses and 51% of DFAST losses.⁹ Represented by the small purple bar in the illustration below, the GSEs are spending less than 5% of the guarantee fees they collect on CRT premium to cover a wide range of severe-loss scenarios across their entire portfolios.

EXHIBIT 3



While the CRT structures being used by the GSEs today will provide significant protection during the next severe-stress event, taxpayers are still exposed to significant risk due to the first loss retained by the GSEs. The GSE First Loss, represented by the blue bar above, represents approximately \$50 billion of losses that the GSEs would have to pay before realizing the CRT protection benefit. The black dot represents an estimate of modeled losses in a benign economic environment (expected losses), which is only about .25%. Thus, the GSEs have an opportunity to reduce the first losses they retain by purchasing CRT that attaches at .25%. The GSEs would receive significant capital credit under the ERCF for

⁸ CRT protection based on CIRT 2023-9, which attaches at 1.65% of losses and detaches at 4% of losses.

⁹ *GFC based on 2006 vintage Data Dynamics modeled loss on CIRT 2023-9: **DFAST Severe Adverse proxied w/ Aon modeled results (down 35% HPA).



purchasing CRT protection between .25% to 1.65%, resulting in a much lower cost of capital to cover the \$50 billion exposure compared to other forms of capital (equity or debt) the GSEs would need to raise. Procuring CRT is a cost-effective and proven method to reduce the volatility of retained losses, which should enable the GSEs to generate profits across a variety of severe stress scenarios, as the next crisis is unlikely to mirror past crises.

***"REGULARLY ISSUING CRT INTO THE MARKET
PROMOTES MARKET DISCIPLINE AND PRUDENT
RISK MANAGEMENT FOR THE GSES."***

The Importance of Programmatic Issuance

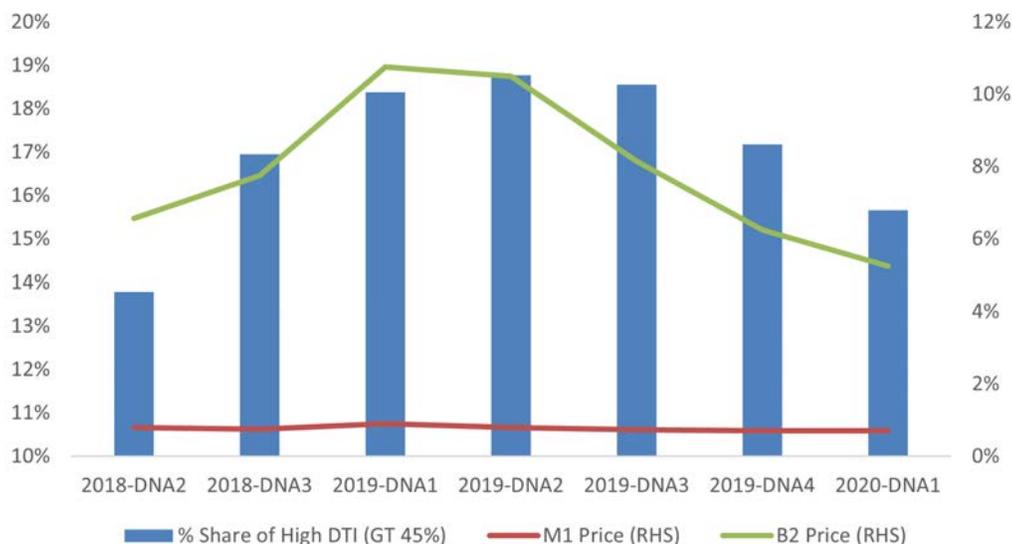
Since 2013, the FHFA has included a requirement in its annual scorecard to “transfer a meaningful amount of credit risk to private investors in a commercially reasonable and safe and sound manner, reducing risk to taxpayers.”¹⁰ Acting Director Edward DeMarco, who served from 2009–2013, instructed the GSEs to launch CRT programs and required its programmatic issuance. Subsequently, CRT has been a consistent scorecard requirement under FHFA directors appointed by presidents from both political parties, though they have differed significantly in their degree of support. Director Mark Calabria (2019–2021), for instance, modified the ERCF in 2020 to significantly decrease recognition of CRT and, as a result, CRT issuance decreased. Current Director Sandra Thompson immediately amended the ERCF in 2021 to restore recognition of CRT and CRT issuance increased. This whipsaw in issuance is problematic for numerous reasons.

Regularly issuing CRT into the market promotes market discipline and prudent risk management for the GSEs. Reinsurance transactions require extensive due diligence on mortgage portfolios, which provides the GSEs, regulators and policymakers with an independent view of the risk underlying the portfolio. For example, beginning in late 2018 CRT prices on Fannie Mae deals rose when the concentration of borrowers with high debt-

¹⁰ 2024 Scorecard for Fannie Mae, Freddie Mac, and Common Securitization Solutions ([fhfa.gov](https://www.fhfa.gov)).

to-income (DTI) increased from 14% to 19%.¹¹ In response to the CRT market feedback, the GSEs tightened underwriting criteria to address this concentration and pricing decreased as a result. Exhibit 4 illustrates how CRT pricing for the B2 juniormost tranche increased as the concentration of high DTI mortgages increased. The pricing difference is pronounced in the B2 tranche of these CRT deals because the attachment point is very low; in other words, B2 investors are more exposed to increases in the credit risk of the portfolio and the pricing of this tranche reflects that sensitivity.

EXHIBIT 4: B2 PRICING IS MORE SENSITIVE TO RISK PROFILE THAN M1



However, as demonstrated by the red line, the M1 pricing does not change in response to the increased credit risk because the M1 attaches at 3%. In other words, M1 investors are not exposed to a greater risk of loss due to changes in the credit risk because the increased losses would still be absorbed by the more junior tranches. Pricing levels of the M1 tranche are more indicative of macroeconomic risk, which was fairly consistent across these CRT deals.

The CRT deals being done in 2024 are attaching at 1.65% to lower the overall cost of the transaction, which is much higher than the .10% attachment point of the 2018 and 2019 deal. Attaching at 1.65% is over 6X higher than the expected losses in our 2006 illustrative example detailed in Exhibit 3. As a result, the pricing feedback related to the credit risk of the portfolios being covered by CRT today is muted. Material changes in the composition of the mortgage portfolio are not likely to cause a pricing change because the estimated additional losses will remain within the GSEs' retained first losses. Attaching lower would enhance the feedback loop provided to the GSEs, regulators and policymakers.

¹¹ The increase of high-DTI loans was due to Fannie Mae changing its automated underwriting system criteria in the DU[®] 10.1 implementation.



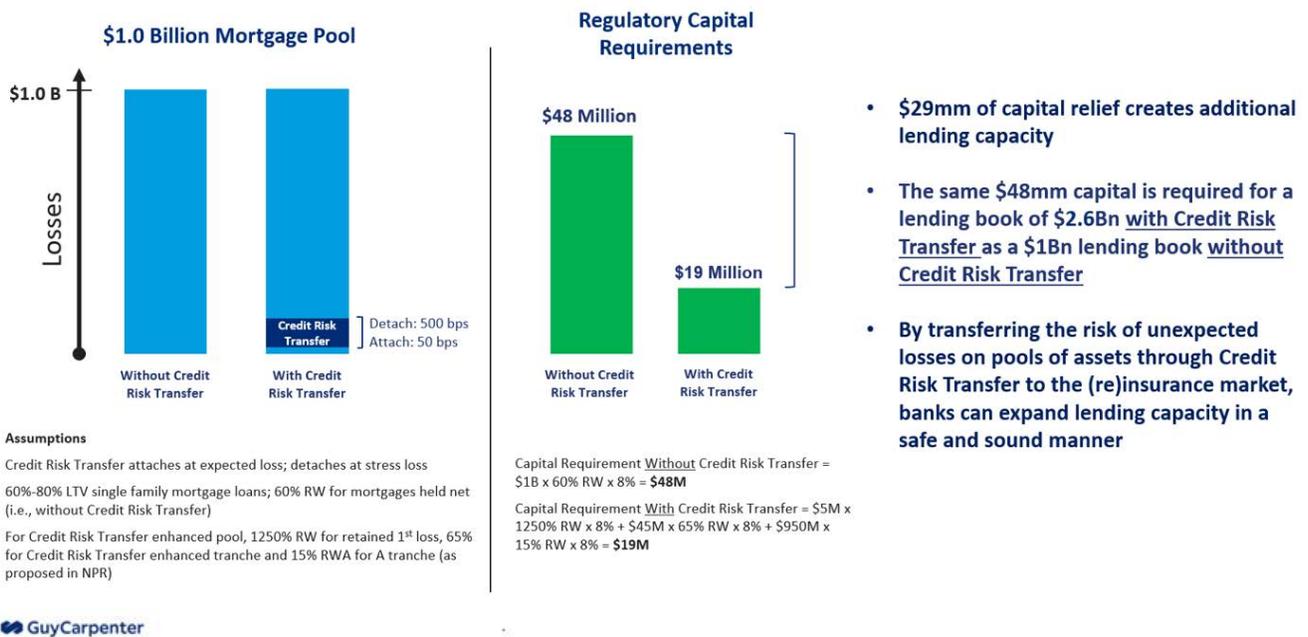
The long-term institutionalization of programmatic CRT is also necessary to build investor confidence in and commitment to the market. Regularly issuing CRT into the market demonstrates the GSEs' commitment to ongoing risk management, as well as the ongoing opportunity necessary for reinsurers to invest in the expertise and infrastructure to analyze and underwrite the risk. Finally, regular issuance allows investors to better calibrate their pricing models and risk assessments, potentially reducing costs for GSEs and borrowers.

Bank CRT Could Increase the Availability and Affordability of Mortgages

Currently, the capital rules applicable to banks are unclear and do not provide the certainty necessary for U.S. banks to programmatically issue CRT at scale, like the ERCF does for the GSEs. While banks are executing some funded CRT deals, the bank capital rules in the U.S. effectively prohibit CRT by reinsurers.

However, in what is known as the Basel III Endgame, the bank capital rules are under review by the banking regulators, including the rules that would facilitate CRT issuance by multiline reinsurers. Reinsurers provide critical CRT capacity supporting both the GSEs' and European banks' CRT programs; U.S. banks should also receive credit for CRT protection provided by reinsurers.¹² Assuming that the final Basel III Endgame provides the certainty that banks need, the largest banks' lending capacity and the availability of mortgages to borrowers could significantly increase.

EXHIBIT 5: CRT BURDEN REDUCES, ENHANCES LENDING CAPACITY



¹² See 4Q23 FHFA CRT Progress Report: <https://www.fhfa.gov/sites/default/files/2024-04/CRT-Progress-Report-4Q23.pdf>.

As illustrated in Exhibit 5, with the benefit of CRT attaching at .05% and detaching at .50%, the banks could achieve \$35 million of capital relief, capital that could be redeployed to support the communities they serve, including through the use of affordable housing products tailored to serve the needs of borrowers in their geographic footprints. Increasing the availability and affordability of mortgage capacity through CRT should enhance a bank's ability to meet affordable housing needs.

Addressing Criticisms of CRT

While the benefits of CRT are clear, it's important to address common criticisms:

1. "CRT is not as good as equity capital."

CRT is different from, not inferior to, equity capital. It offers superior scalability and allows for more precise targeting of specific risks. Raising equity is burdensome and holding too much equity if originations suddenly drop is also troublesome as it can distort decision-making to earn a return on capital. While equity capital provides a general buffer against all types of risks, CRT can be quickly scaled to transfer specific credit risks, is often cheaper and allows for more efficient capital utilization.

2. "Unfunded CRT provided by reinsurers is not as good as funded CRT."

Funded CRT transactions are typically executed by issuing bonds or credit-linked notes to capital market investors from a single purpose legal entity, and the proceeds from the sale of those investments are posted as collateral in a trust to cover future losses. The legal entity issuing the investments is not a strong counterparty and only exists for the purpose of the CRT transaction. Reinsurance protection, on the other hand, is provided by highly regulated, strongly capitalized counterparties that have diversified global risk portfolios that do not correlate with the credit risk of mortgages. Reinsurers are required to hold capital set by insurance regulators, tailored to their insurance portfolios. As a result, reinsurers have a strong history of deploying capital to cover losses caused by everything from weather events to credit losses from defaulted mortgages, with the NFIP evidencing a recent example of the significant protection provided by reinsurers.

3. "The cost of CRT outweighs its benefits."

This criticism ignores the fundamental purpose of insurance — protecting against unexpected losses. CRT is less expensive than common equity, with recent CRT deals priced at less than 2%¹³ compared to equity investors expecting at least 7% return. The cost of CRT should be viewed in the context of the entire economic cycle, as its value

¹³ Based on Freddie Mac premium rates on recent CRT ACIS deals: <https://capitalmarkets.freddiemac.com/crt/reinsurance/pricing>.

becomes apparent during times of stress when it absorbs losses that would otherwise fall to taxpayers.

4. “CRT is a form of capital arbitrage that decreases claims-paying resources.”

As the GSEs are monoline insurance companies at their core, the use of reinsurance is paramount to redistribute the systemic risk out to the broader market. Diversified reinsurers are subject to different regulatory capital rules that appropriately recognize the benefit of diversification. The GSEs should be encouraged to cede credit risk to diversified counterparties with a lower cost of capital.

5. “GSEs have been purchasing too much CRT.”

The GSEs should optimize the level of CRT purchased to maximize risk-management benefits, cost of capital and the need for equity capital. Limiting CRT protection to only the most remote risk eliminates the risk-management benefit (as the coverage is unlikely to attach even during stress) and mutes the pricing signal or market feedback on the underlying portfolio. The GFC required four times more capital cushion than anticipated, underscoring the importance of comprehensive risk transfer.¹⁴

6. “Forbearance eliminates the need for CRT.”

It’s unrealistic to expect government bailouts for every housing downturn, particularly post-conservatorship. CRT provides a systematic approach to risk management that operates continuously to ensure protection is intact during periods of acute stress. Post-conservatorship, appropriate capital requirements recognizing CRT and regulatory expectations with respect to risk management will be crucial for incentivizing its use by the GSEs.

Looking Ahead: Commitment and Innovation for Continued CRT Success

As the CRT market has matured over the past decade, the programs have evolved to attract a wider range of investors and to provide more tailored solutions. Innovation will continue to be important over the next decade, with possible developments to include enhanced data analytics that improve risk modeling and pricing, incorporation of climate risk, evolving regulatory regimes and GSE reform scenarios. Developing a comprehensive regulatory risk management framework, including the importance of CRT, will be crucial for the long-term stability of the U.S. housing finance system.

¹⁴ See Federal Reserve Bank of New York Staff Report No. 719, March 2015: https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr719.pdf.



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